

Claims

This listing of claims is intended to replace all prior versions, and listings, of claims in this patent application:

1. (Previously Presented) A liquid crystal display device having a pixel electrode, comprising:
at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode, wherein the capacitor electrode is a different electrode than the pixel electrode.
2. (Previously Presented)
A liquid crystal display device, comprising:
at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode; and
wherein the capacitor electrode is made from a transparent conductive material selected from the group consisting of indium-tin-oxide, indium-zinc-oxide and indium-tin-zinc-oxide.
3. (Previously Presented)
A liquid crystal display device, comprising:
at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode:
a gate insulating film provided on a substrate;
a storage electrode provided on the gate insulating film to overlap the gate line; and
a protective layer provided between the storage electrode and the capacitor electrode.

4. (Currently amended) ~~The liquid crystal display device as claimed in claim 3, wherein the storage capacitor includes:~~

A liquid crystal display device, comprising:

at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode;

a gate insulating film provided on a substrate;

a storage electrode provided on the gate insulating film to overlap the gate line;

a protective layer provided between the storage electrode and the capacitor electrode;

a first storage capacitor provided between the storage electrode and the gate line with the intervening gate insulating film; and

a second storage capacitor provided between the storage electrode and the capacitor electrode with the intervening protective layer.

5. (previously presented) The liquid crystal display device as claimed in claim 4, wherein the first storage capacitor is connected to the second storage capacitor in parallel.

6. (previously presented) The liquid crystal display device as claimed in claim 4, wherein the contact hole is at least two holes spaced to each other at a length larger than the width of the storage electrode.

7. (previously presented) The liquid crystal display device as claimed in claim 6, wherein the capacitor electrode has a length larger than the storage electrode.

8. (previously presented) The liquid crystal display device as claimed in claim 3, further comprising:

a gate electrode connected to the gate line;

source and drain electrodes provided on the gate insulating film; and

a pixel electrode provided on the protective layer to be electrically connected to the drain electrode.

9. (previously presented) The liquid crystal display device as claimed in claim 3, wherein the pixel electrode electrically contacts the storage electrode through said contact hole passing through the protective layer.

10. (previously presented) The liquid crystal display device as claimed in claim 8, wherein the gate insulating film has a thickness of about 4000Å.

11. (previously presented) The liquid crystal display device as claimed in claim 8, wherein the protective layer has a thickness of about 2000Å.

12. (previously presented) A method of fabricating a liquid crystal display device, comprising the steps of:

- forming a gate line on a substrate;
- forming a gate insulating film on the substrate;
- forming a storage electrode on the gate insulating film to overlap the gate line;
- forming a protective layer made of an insulating material on the gate insulating film;
- defining at least two contact holes to expose the gate line; and
- forming a capacitor electrode electrically contacting the gate line on the protective layer.

13. (previously presented) The method as claimed in claim 12, wherein the capacitor electrode is made from a transparent conductive material selected from the group consisting of indium-tin-oxide, indium-zinc-oxide and indium-tin-zinc-oxide.

14. (previously presented) The method as claimed in claim 12, wherein the said least two contact holes are spaced to each other at a length larger than the width of the storage electrode.

15. (previously presented) The method as claimed in claim 14, wherein the capacitor electrode has a length larger than the storage electrode.

16. (previously presented) The method as claimed in claim 12, further comprising the steps of:
forming a gate electrode connected to the gate line on the substrate;
forming a semiconductor layer on the gate insulating film;
forming source and drain electrodes on the semiconductor layer; and
forming a pixel electrode on the protective layer.

17. (previously presented) The method as claimed in claim 16, wherein the pixel electrode electrically contacts the storage electrode through said contact hole passing through the protective layer.

18. (previously presented) The method as claimed in claim 16, wherein the gate insulating film has a thickness of about 4000Å.

19. (previously presented) The method as claimed in claim 16, wherein the protective layer has a thickness of about 2000Å.

20. (Previously Presented) A liquid crystal display device, comprising:
at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being directly connected, via a contact hole passing through said at least two storage capacitors, to a capacitor electrode of only one of the two storage capacitors.

21. (Previously Presented) A liquid crystal display device having an uppermost electrode, comprising:

at least two storage capacitors disposed between a gate line and a capacitor electrode formed above the gate line, said gate line being directly connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode which is the uppermost electrode.

22. (New) A liquid crystal display device, comprising:

at least two storage capacitors disposed vertically above one another between a gate line and a capacitor electrode formed above the gate line, said gate line being connected, via a contact hole passing through said at least two storage capacitors, to the capacitor electrode; and

wherein the capacitor electrode is made from a transparent conductive material selected from the group consisting of indium-tin-oxide, indium-zinc-oxide and indium-tin-zinc-oxide.